

Claims

What is claimed is:

- [c1] An apparatus for examining printed characters, comprising:
- a database storing standard characters;
 - means for inputting and storing a reference character;
 - means for acquiring an actual image of a printed character;
 - means for calculating a similarity degree between the actual image of the printed character and an image of a standard character stored in the database;
 - and
 - means for retrieving a first candidate character having a highest similarity degree to the printed character from the standard characters stored in the database and comparing the first candidate character with the reference character;
- wherein if the first candidate character retrieved from the database equates to the reference character, the printed character is determined to be correct, and if the first candidate character retrieved from the database does not equate to the reference character, the printed character is determined to be incorrect.
- [c2] The apparatus according to claim 1, wherein the similarity degree is calculated in accordance with luminance values.
- [c3] The apparatus according to claim 1, wherein a plurality of reference characters are compared with a plurality of first candidate characters retrieved from the database based on the actual image of a plurality of printed characters, and the determination whether the plurality of printed characters are correct is made by finding whether the plurality of first candidate characters retrieved from the database are all equal to the corresponding plurality of reference characters.

- [c4] The apparatus according to claim 1, further comprising means for comparing a value of the similarity degree between the actual image of the printed character and the first candidate character with a predetermined threshold value to determine whether the printed character is in an allowable range.
- [c5] The apparatus according to claim 1, wherein a second candidate character having a second-highest similarity degree to the printed character is retrieved from the database in addition to the first candidate character, and if the first character equates to the reference character, the printed character is determined to be correct only if the similarity degree of the first candidate character to the printed character exceeds the similarity degree of the second candidate character to the printed character by a predetermined threshold value.
- [c6] The apparatus according to claim 1, further comprising a similar image character table that contains a character having an images similar to the image of the standard character, wherein if the first candidate character retrieved from the database does not equate to the reference character, the reference character is then compared with the character contained in the similar image character table and determined whether the character contained in the similar image character table equates to the reference character.
- [c7] A method for examining printed characters, comprising:
storing standard characters in a database;
inputting and storing a reference character;
acquiring an actual image of a printed character;
calculating a similarity degree between the actual image of the printed character and an image of a standard character stored in the database; and
retrieving a first candidate character having a highest similarity degree to the printed character from the database and comparing the first candidate character with the reference character;

wherein if the first candidate character retrieved from the database equates to the reference character, the printed character is determined to be correct, and if the first candidate character retrieved from the standard characters stored in the database does not equate to the reference character, the printed character is determined to be incorrect.

- [c8] The method according to claim 7, wherein the similarity degree is calculated in accordance with luminance values.
- [c9] The method according to claim 7, wherein a plurality of reference characters are compared with a plurality of first candidate characters retrieved from the database based on actual images of a plurality of printed characters, and the determination whether the plurality of printed characters are correct is made by finding whether the plurality of first candidate characters retrieved from the database are all equal to the corresponding plurality of reference characters.
- [c10] The apparatus according to claim 7, further comprising means for comparing a value of the similarity degree between the actual image of the printed character and the first candidate character with a predetermined threshold value to determine whether the printed character is within a allowable range.
- [c11] The method according to claim 7, wherein a second candidate character having a second-highest similarity degree to the printed character is retrieved from the database in addition to the first candidate character, and if the first character equates to the reference character, the printed character is determined to be correct only if the similarity degree of the first candidate character to the printed character exceeds the similarity degree of the second candidate character to the printed character by a predetermined threshold value.

- [c12] The method according to claim 7, further comprising preparing a similar image character table that contains a character having an image that is similar to the image of the standard character, wherein if the first candidate character retrieved from the database equates to the reference character, the reference character is then compared with the character contained in the similar image character table and determined whether the character contained in the similar image character table equates to the reference character.